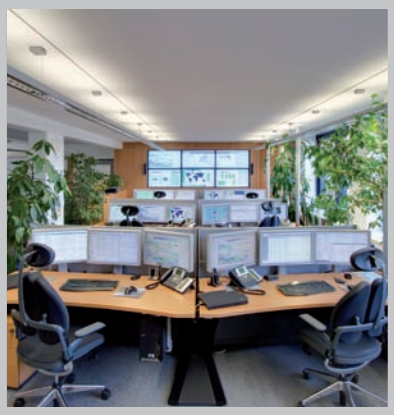
Guntermann & Drunck GmbH

seit 1985

DVI KVM Switches

DVIMUX-DL 7.2

KVM Switches
Switches for the effective operation
of multiple computers via one workstation



Leading the way in digital KVM

Leading the Way in digital KVM

Guntermann & Drunck GmbH has been established in 1985 and is named after its founders. Over 25 years have since past, and we are now a leading manufacturer of digital and analog KVM switching systems.
As an owner-managed company we work with a broad range in both digital and analog KVM closely with the marketplace and make our decisions with and in the interests of our customers. It is our philosophy to meet our customers while making decisions, to accompany them in the process and ensure that they achieve their goals.

We can do this because as a medium sized company we have short communication paths and all core competencies are in house – from development through to production. This way we can even make the impossible possible at times. If it is thanks to the modularity of the products or by implementing a customised solution. We orient ourselves towards the needs of the customer – and not the other way round.

Organisations, service providers and companies of all sizes managing numerous computers, servers and other network devices trust the comprehensive advice and service provided by Guntermann & Drunck GmbH.

Thanks to these different fields of specialisation, the demands placed on the products are many and are manifold. Our products have to provide a long-life service, be secure, uncomplicated, user-friendly, understandable and adaptable.

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The KVM switches DVIMUX-DL enable you to operate two or four computers over one user console.

The DVIMUX-DL switches the following signals:

- keyboard/mouse
- dual-link DVI and VGA
- audio
- USB 2.0

The devices are available as variants transmitting one, two, three or four video channels.

A working system consists of a DVIMUX-DL and the required computer connection cable sets.

DVIMUX4-DL-MC2-PS/2 - front view

Highlights

Video
- mixed DVI/VGA operation on input and output side
- E-DDC support
- single- and multi-channel variants
- DVI dual-link 300 Mbps

Signals
- switches audio and transparent USB 2.0 signals
- USB and PS/2 keyboard/mouse support

Miscellaneous
- suitable for all operating systems
- external switching over RS232 possible
- also available as 12V or 24V variant

Features

Video
- DVI resolution up to 2560 × 1600 @ 60Hz or 2k x 2k @ 60Hz per channel
- VGA resolution up to 1920 × 1440 @ 75Hz or 2k x 2k @ 60 Hz per channel
- video bandwidth DVI dual-link 330 MP/s
- video bandwidth VGA up to 400 MHz
- digital colour mode 24 bit or analog
- backward-compatible to single-link
- DVIMUX2-DL & DVIMUX4-DL are 3D-capable with NVIDIA® 3D Vision™; resolution up to 1680 x 1050@120Hz

System upgrade
- update by flash upgrade at device

Devices
- only access standard computer interfaces
- no software installation required
- internal power supply
- available as desktop and rack mount variant
- housed in an aluminium casing for best interference resistance
- hot-pluggable

Variants

Design
- available as desktop (DT) or rack mount (RM) variant
- PS/2 or USB 2.0 transparent

Video channels
- DVIMUX2-DL - Single-Channel, MC2
- DVIMUX4-DL - Single-Channel, MC2, MC3, MC4

Expansion

The DVIMUX-DL devices are fully equipped.
Recently no expansions are available.

Installation

Connect the computers to the back side of the device. Distinctive standard cables link keyboard, video, mouse, audio, and USB interfaces to the switch.

Cable length for PS/2 cable sets: 2 m, 5 m
Cable length for USB cable sets: 2 m, 5 m

The user console is simply connected by linking keyboard, monitor, mouse, speakers, and USB devices to the intended interfaces.

Feel free to download the DVIMUX-DLmanual to find out more details about the start-up.

DVIMUX2-DL

left: DVIMUX2-DL-USB - front view
right: DVIMUX2-DL-USB - rear view

	DVIMUX2-DL-USB	DVIMUX2-DL-PS/2
Video		
User console connection per device	1	
Signal type/video	analog/digital video	
Analog resolution	up to 1920 × 1440 @ 75 Hz or 2k x 2k @ 60 Hz	
Digital resolution	btw. 640 × 480 @ 100 Hz and 2560 × 1600 @ 60 Hz or 2k x 2k @ 60 Hz	
Analog video bandwidth	400 MHz	
Digital video bandwidth	DVI single-link 165 mbps DVI dual-link 330 mbps	
Standards	E-DDC support	
Digital colour mode	24 bit	
Video sources per computer	1	
Computer connection	KVM cable set	
Computer ports	2	
Interfaces for user console	DVI-I socket	
Interfaces to computer	2 × DVI-I socket	

Keyboard/Mouse		
Interfaces for user console		2 × Mini-DIN 6 socket
	2 × USB-A socket	
Interfaces to computer	2 × USB-B socket	2 × (2 × Mini-DIN 6 socket)
Audio		
Connection	analog	
Bandwidth	22 kHz	
Interfaces for user console	2 × 3.5 mm jack plug (line in + speaker)	1 × 3.5 mm jack plug (speaker)
Interfaces to computer	2 × (2 × 3.5 mm jack plug) (line in + line out)	2 × 3.5 mm socket (line in)

Transparent USB 2.0		
USB power supply	high power up to 500 mA	
USB transmission rate	up to 480 Mbps	
Transmission range	5 m	
Interfaces for user console	2 × USB-A socket	
Interfaces to computer	2 × USB-B socket(also keyboard/mouse)	
Power supply		
Type	internal power pack	
Connection	1 × IEC plug	
Voltage	AC100-240V/60-50Hz	
	0.25-0.13A	0.2-0.1A
Casing		
Material	anodised aluminium	
Desktop (W × H× D)	210 × 44 × 210 mm	
Rackmount (W × H × D)	19" × 1 U × 210 mm	
Weight	approx. 1.2 kg	
Update		
Process	local service socket	
Connection	1 × 2.5 mm jack plug	
Operating conditions		
Temperature	+5 to +40 °C	
Air humidity	< 80% non-condensing	
Conformity	CE, RoHs	

DVIMUX2-DL-MC2

left : DVIMUX2-DL-MC2-USB - front view
right: DVIMUX2-DL-MC2-USB - rear view

	DVIMUX2-DL-MC2-USB	DVIMUX2-DL-MC2-PS/2
Video		
User console connection per device	1	
Signal type/video	analog/digital video	
Analog resolution	up to 1920 × 1440 @ 75 Hz or 2k x 2k @ 60 Hz	
Digital resolution	btw. 640 × 480 @ 100 Hz and 2560 × 1600 @ 60 Hz or 2k x 2k @ 60Hz	
Analog video bandwidth	400 MHz	
Digital video bandwidth	DVI single-link 165 mbps DVI dual-link 330 mbps	
Standards	E-DDC support	
Digital colour mode	24 bit	
Video sources per computer	2	
Computer connection	KVM cable set	
Computer ports	2	
Interfaces for user console	2 x DVI-I socket	
Interfaces to computer	2 × (2 x DVI-I socket)	
Keyboard/Mouse		
Interfaces for user console		2 × Mini-DIN 6 socket
	2 × USB-A socket	
Interfaces to computer	4 × USB-B socket	2 × (2 × Mini-DIN 6 socket)
Audio		
Connection	analog	
Bandwidth	22 kHz	
Interfaces for user console	2 × 3.5 mm jack plug (line in + speaker)	1 × 3.5 mm jack plug (speaker)
Interfaces to computer	2 × (2 × 3.5 mm jack plug) (line in + line out)	2 × 3.5 mm socket (line in)

Transparent USB 2.0		
USB power supply	high power up to 500 mA	
USB transmission rate	up to 480 Mbps	
Transmission range	5 m	
Interfaces for user console	2 × USB-A socket	
Interfaces to computer	4 × USB-B socket(also keyboard/mouse)	
Power supply		
Type	internal power pack	
Connection	1 × IEC plug	
Voltage	AC100-240V/60-50Hz	
	0.3-0.2A	0.3-0.2A
Casing		
Material	anodised aluminium	
Desktop (W × H × D)	210 × 66 × 210 mm	
Rackmount (W × H × D)	19" × 1.5 U × 210 mm	
Weight	approx. 1.5 kg	
Update		
Progress	local service socket	
Connection	1 × 2.5 mm jack plug	
Operating conditions		
Temperature	+5 to +40 °C	
Air humidity	< 80% non-condensing	
Conformity	CE, RoHs	

DVIMUX4-DL

left : DVIMUX4-DL-USB - front view
right: DVIMUX4-DL-USB - rear view

	DVIMUX4-DL-USB	DVIMUX4-DL-PS/2
Video		
User console connection per device	1	
Signal type/video	analog/digital video	
Analog resolution	up to 1920 × 1440 @ 75 Hz or 2k x 2k @ 60 Hz	
Digital resolution	btw. 640 × 480 @ 100 Hz and 2560 × 1600 @ 60 Hz or 2k x 2k @ 60Hz	
Analog video bandwidth	400 MHz	
Digital video bandwidth	DVI single-link 165 mbps DVI dual-link 330 mbps	
Standards	E-DDC support	
Digital colour mode	24 bit	
Video sources per computer	1	
Computer connection	KVM cable set	
Computer ports	4	
Interfaces for user console	DVI-I socket	
Interfaces to computer	4 × DVI-I socket	
Keyboard/Mouse		
Interfaces for user console		2 × Mini-DIN 6 socket
	2 × USB-A socket	
Interfaces to computer	4 × USB-B socket	4 × (2 × Mini-DIN 6 socket)
Audio		
Connection	analog	
Bandwidth	22 kHz	
Interfaces for user console	2 × 3.5 mm jack plug (line in + speaker)	1 × 3.5 mm jack plug (speaker)
Interfaces to computer	2 × (2 × 3.5 mm jack plug) (line in + line out)	2 × 3.5 mm socket (line in)

Transparent USB 2.0		
USB power supply	high power up to 500 mA	
USB transmission rate	up to 480 Mbps	
Transmission range	5 m	
Interfaces for user console	2 × USB-A socket	
Interfaces to computer	4 × USB-B socket(also keyboard/mouse)	
Power supply		
Type	internal power pack	
Connection	1 × IEC plug	
Voltage	AC100-240V/60-50Hz	
	0.3-0.15A	0.2-0.1A
Casing		
Material	anodised aluminium	
Desktop (W × H × D)	270 × 44 × 210 mm	
Rackmount (W × H × D)	19" × 1 U × 210 mm	
Weight	approx. 1.5 kg	
Update		
Progress	local service socket	
Connection	1 × 2.5 mm jack plug	
Operating conditions		
Temperature	+5 to +40 °C	
Air humidity	< 80% non-condensing	
Conformity	CE, RoHs	

DVIMUX4-DL-MC2

left: DVIMUX4-DL-MC2-PS/2 - front view
right: DVIMUX4-DL-MC2-PS/2 - rear view

	DVIMUX4-DL-MC2-USB	DVIMUX4-DL-MC2-PS/2
Video		
User console connection per device	1	
Signal type/video	analog/digital video	
Analog resolution	up to 1920 × 1440 @ 75 Hz or 2k x 2k @ 60 Hz	
Digital resolution	btw. 640 × 480 @ 100 Hz and 2560 × 1600 @ 60 Hz or 2k × 2k @ 60Hz	
Analog video bandwidth	400 MHz	
Digital video bandwidth	DVI single-link 165 mbps DVI dual-link 330 mbps	
Standards	E-DDC support	
Digital colour mode	24 bit	
Video sources per computer	2	
Computer connection	KVM cable set	
Computer ports	4	
Interfaces for user console	2 × DVI-I socket	
Interfaces to computer	4 × (2 × DVI-I socket)	
Keyboard/Mouse		
Interfaces for user console		2 × Mini-DIN 6 socket
	2 × USB-A socket	
Interfaces to computer	4 × USB-B socket	4 × (2 × Mini-DIN 6 socket)
Audio		
Connection	analog	
Bandwidth	22 kHz	
Interfaces for user console	2 × 3.5 mm jack plug (line in + speaker)	1 × 3.5 mm jack plug (speaker)
Interfaces to computer	2 × (2 × 3.5 mm jack plug) (line in + line out)	2 × 3.5 mm socket (line in)

Transparent USB 2.0		
USB power supply	high power up to 500 mA	
USB transmission rate	up to 480 mbps	
Transmission range	5 m	
Interfaces for user console	2 × USB-A socket	
Interfaces to computer	4 × USB-B socket (also keyboard/mouse)	
Power supply		
Type	internal power pack	
Connection	1 × IEC plug	
Voltage	AC100-240V/60-50Hz	
	0.4-0.2A	0.31-0.16A
Casing		
Material	anodised aluminium	
Desktop (W × H × D)	270 × 66 × 210 mm	
Rackmount (W × H × D)	19" × 1.5 U × 210 mm	
Weight	approx. 1.7 kg	
Update		
Progress	local service socket	
Connection	1 × 2.5 mm jack plug	
Operating conditions		
Temperature	+5 to +40 °C	
Air humidity	< 80% non-condensing	
Conformity	CE, RoHs	

DVIMUX4-DL-MC3

left : DVIMUX4-DL-USB - front view
right: DVIMUX4-DL-USB - rear view

	DVIMUX4-DL-MC3-USB	DVIMUX4-DL-MC3-PS/2
Video		
Console ports per device	1	
Signal type/video	Analog/digital video	
Analog resolution	Up to 1920 × 1440 @ 75 Hz or 2k x 2k @ 60 Hz	
Digital resolution	Btw. 640 × 480 @ 100 Hz and 2560 × 1600 @ 60 Hz or 2k × 2k @ 60Hz	
Analog video bandwidth	400 MHz	
Digital video bandwidth	DVI single-link 165 mbps DVI dual-link 330 mbps	
Standards	E-DDC support	
Digital colour mode	24 bit	
Video sources per computer	3	
Computer connection	KVM cable set	
Computer ports	4	
Interfaces for user console	3 × DVI-I socket	
Interfaces to computer	4 × (3 × DVI-I socket)	
Keyboard/Mouse		
Interfaces for user console		2 × Mini-DIN 6 socket
	2 × USB-A socket	
Interfaces to computer	4 × USB-B socket	4 × (2 × Mini-DIN 6 socket)
Audio		
Connection	Analog	
Bandwidth	22 kHz	
Interfaces for user console	2 × 3.5 mm jack plug (line in + speaker)	1 × 3.5 mm jack plug (speaker)
Interfaces to computer	2 × (2 × 3.5 mm jack plug) (line in + line out)	2 × 3.5 mm socket (line in)

Transparent USB 2.0		
USB power supply	High power up to 500 mA	
USB transmission rate	Up to 480 mbps	
Transmission range	5 m	
Interfaces for user console	2 × USB-A socket	
Interfaces to computer	4 × USB-B socket(also keyboard/mouse)	
Power supply		
Type	Internal power pack	
Connection	1 × IEC plug	
Voltage	AC100-240V/60-50Hz	
	0.5-0.2A	0.4-0.2A
Casing		
Material	Anodised aluminium	
Desktop (W × H × D)	270 × 88 × 210 mm	
Rackmount (W × H × D)	19" × 2 U × 210 mm	
Weight	Approx. 2.1 kg	
Update		
Process	Local service socket	
Connection	1 × 2.5 mm jack plug	
Operating conditions		
Temperature	+5 to +40 °C	
Air humidity	< 80% non-condensing	
Conformity	CE, RoHs	

DVIMUX4-DL-MC4

left : DVIMUX4-DL-USB - front view
right: DVIMUX4-DL-USB - rear view

	DVIMUX4-DL-MC4-USB	DVIMUX4-DL-MC4-PS/2
Video		
Console ports per device	1	
Signal type/video	Analog/digital video	
Analog resolution	Up to 1920 × 1440 @ 75 Hz or 2k x 2k @ 60 Hz	
Digital resolution	Btw. 640 × 480 @ 100 Hz and 2560 × 1600 @ 60 Hz or 2k × 2k @ 60Hz	
Analog video bandwidth	400 MHz	
Digital video bandwidth	DVI single-link 165 mbps DVI dual-link 330 mbps	
Standards	E-DDC support	
Digital colour mode	24 bit	
Video sources per computer	4	
Computer connection	KVM cable set	
Computer ports	4	
Interfaces for user console	4 × DVI-I socket	
Interfaces to computer	4 × (3 × DVI-I socket)	
Keyboard/Mouse		
Interfaces for user console		2 × Mini-DIN 6 socket
	2 × USB-A socket	
Interfaces to computer	4 × USB-B socket	4 × (2 × Mini-DIN 6 socket)
Audio		
Connection	Analog	
Bandwidth	22 kHz	
Interfaces for user console	2 × 3.5 mm jack plug (line in + speaker)	1 × 3.5 mm jack plug (speaker)
Interfaces to computer	2 × (2 × 3.5 mm jack plug) (line in + line out)	2 × 3.5 mm socket (line in)

Transparent USB 2.0		
USB power supply	High power up to 500 mA	
USB transmission rate	Up to 480 mbps	
Transmission range	5 m	
Interfaces for user console	2 × USB-A socket	
Interfaces to computer	4 × USB-B socket(also keyboard/mouse)	
Power supply		
Type	Internal power pack	
Connection	1 × IEC plug	
Voltage	AC100-240V/60-50Hz	
	0.5-0.2A	0.4-0.2A
Casing		
Material	Anodised aluminium	
Desktop (W × H × D)	270 × 132 × 210 mm	
Rackmount (W × H × D)	19" × 3 U × 210 mm	
Weight	Approx. 2.5 kg	
Update		
Process	Local service socket	
Connection	1 × 2.5 mm jack plug	
Operating conditions		
Temperature	+5 to +40 °C	
Air humidity	< 80% non-condensing	
Conformity	CE, RoHs	

List of Item Numbers Single-Channel

Item No.	Description	CPU	PS/2	U2	DT	RM
A2100091	DVIMUX2-DL-PS/2	2	PS/2		DT	
A2100092	DVIMUX2-DL-PS/2-RM	2	PS/2			RM
A2100093	DVIMUX2-DL-USB	2		U2	DT	
A2100094	DVIMUX2-DL-USB-RM	2		U2		RM
A2100098	DVIMUX4-DL-PS/2	4	PS/2		DT	
A2100099	DVIMUX4-DL-USB	4		U2	DT	
A2100100	DVIMUX4-DL-PS/2-RM	4	PS/2			RM
A2100101	DVIMUX4-DL-USB-RM	4		U2		RM

List of Item Numbers Multi-Channel

Item No.	Description	CPU	PS/2	U2	DT	RM
A2100122	DVIMUX2-DL-MC2-PS/2	2	PS/2		DT	
A2100124	DVIMUX2-DL-MC2-PS/2-RM	2	PS/2			RM
A2100123	DVIMUX2-DL-MC2-USB	2		U2	DT	
A2100125	DVIMUX2-DL-MC2-USB-RM	2		U2		RM
A2100102	DVIMUX4-DL-MC2-PS/2	4	PS/2		DT	
A2100102-24V	DVIMUX4-DL-MC2-PS/2 - 24V	4	PS/2		DT	
A2100103	DVIMUX4-DL-MC2-PS/2-RM	4	PS/2			RM
A2100104	DVIMUX4-DL-MC2-USB	4		U2	DT	
A2100105	DVIMUX4-DL-MC2-USB-RM	4		U2		RM
A2100106	DVIMUX4-DL-MC3-PS/2	4	PS/2		DT	
A2100107	DVIMUX4-DL-MC3-PS/2-RM	4	PS/2			RM
A2100108	DVIMUX4-DL-MC3-USB	4		U2	DT	
A2100109	DVIMUX4-DL-MC3-USB-RM	4		U2		RM
A2100110	DVIMUX4-DL-MC4-PS/2	4	PS/2		DT	
A2100111	DVIMUX4-DL-MC4-PS/2-RM	4	PS/2			RM
A2100112	DVIMUX4-DL-MC4-USB	4		U2	DT	
A2100113	DVIMUX4-DL-MC4-USB-RM	4		U2		RM

ABBREVIATIONS

CPU = Computer module
PC = Computer module

CON = User module
REM = User module

MC2 = Multichannel 2
MC3 = Multichannel 3
MC4 = Multichannel 4

M = Multimode
S = Singlemode
RM = For assembly in a 19“ rack
DT = Available as desktop variant
A = Audio
AR = Audio + RS232
R = RS232
U = transparent USB 1.1
U2 = transparent USB 2.0
D = Delay

EQUIPMENT FEATURES

= keyboard/mouse

= dual-link DVI video

= single-link DVI video

= single-link DVI + VGA

= VGA video

= Audio

= RS232

= USB 1.1

= USB 2.0

= Delay

= Screen Freeze

= Power Switching

= Fire Wire

= VT100

= KVM IP access

= Network connection

= Web interface

= DevCon support

= Monitoring

= CAT cable

= Fiber optics

= Single user

= Multi user

= Separat local/remote user

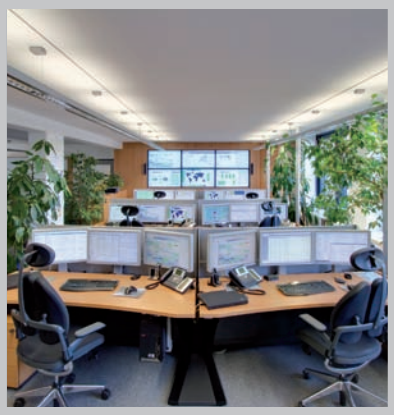
seit 1985

Guntermann & Drunck
GmbH

DVI KVM Switches

DL-MUX 7.2

KVM Switches
Switches for the effective operation
of multiple computers via one workstation



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Thanks to these different fields of specialisation, the demands placed on the products are many and are manifold. Our products have to provide a long-life service, be secure, uncomplicated, user-friendly, understandable and adaptable.

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The KVM Switch DL-MUX4 enables you to operate four computers over one user console.

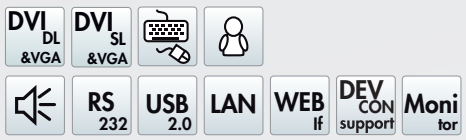
The DL-MUX4 switches the following signals:

- Keyboard/mouse
- Dual-link DVI, single-link DVI and VGA
- Audio
- USB 2.0

The device is available in variants transmitting one, two, three, or four video channels.

With its network connection, the web interface and the DLM-Monitoring, the DL-MUX4 offers numerous features for mission-critical applications.

A working system consists of one DL-MUX4 and the relevant computer connection cable sets.



DL-MUX4-MC4 - Rear view

Highlights

Video
- Mixed DVI/VGA operation on input and output side
- E-DDC support
- Single- and multi-channel variants
- Supports Barco PVS graphics cards
- Bandwidth: dual-link DVI 330 Mbps
  single-link DVI 165 Mbit/s
- DL-MUX4 is ready for 3D with NVIDIA® 3D Vision™; resolution up to 1680 x 1050@120Hz

Signals
- Supports PS/2 and USB keyboard/mouse
- Switches audio and transparent USB 2.0 signals

Network / Communication / Safety
- Two network interfaces can be used in separated sub-networks or as redundancy via network bonding (link aggregation) and increase reliability
- Configuration via web interface
- Monitoring via SNMP and web interface
- In terms of mission critical applications is DL-MUX4 also Tempest-area I capable
- Reports device conditions (temperature, voltage, computer status etc.)
- Identification LED for locating the device in complex installations
- Redundant power supply
- Logbook: electronic notes regarding the device; can be exported as .csv file

DLM monitoring function
The integrated DLM monitoring function auto-transmits device status messages to syslog servers or sends them as SNMP trap. Manual monitoring is carried out over the web interface.

Preventive device monitoring can also be carried out using SNMP agents. Querying the device temperature regularly via SNMP-GET provides statistics on daily top values. Even though these values are still under the warning limit, the information enables a preventive reaction.

SNMP SET requests have an active impact on G&D products (e.g. when changing channels at a DL-MUX4)

The DL-MUX monitoring function queries the following values:
- Power supplies (on/off)
- Temperature limit (above/below average)
- Connection cable (interrupted/uninterrupted)
- Computer (on/off)
- DVI video input (available/not available)

DLM monitoring enables proactive monitoring instead of reactive maintenance.

Expansion
- Firmware expansion for preparing switching over network (IP-Control-API)
- Switching over RS232 (OperatorPanel4):
  With the OperatorPanel4, users can switch their KVM switch comfortably from the desk by pressing a button. Now users can install the switch anywhere to save space. To switch between the channels of the switch, press the „Enable“ button and the channel button at the same time. Pressing two buttons at the same time prevents you from switching the channels by accident.

Features

Video
- DVI resolution up to 2560 × 1600 @ 60Hz incl. 2k × 2k @ 60 Hz per channel
- VGA resolution up to 1920 × 1440 @ 75 Hz incl. 2k x 2k @ 60 Hz per channel
- Video bandwidth DVI dual-link: 330 Mbps
- Video bandwidth VGA up to 400 MHz
- Digital colour mode 24 bits or analog
- Backward-compatible to single-link DVI

System upgrade
- Updates via flash upgrades at device and over network (web interface)

Device
- Only access the standard computer interfaces
- Dual network connectivity
- Configuration over web interface
- Redundant power supply
- No software installation required
- Available as desktop and rack mount variant
- Shipped in an aluminium casing for best interference resistance
- Hot-pluggable

System upgrade
- Updates through flash upgrades over network (web interface)

Variants

Design
- Available as desktop (DT) or rack mount (RM) variant

Video channels
- Single-Channel, MC2, MC3, MC4

Expansion

DevCon Support
The DL-MUX supports network based communication with the appliance DevCon-Center.

Several DL-MUX devices can be centrally monitored and configured using the DevCon-Center.

IP-Contol-API
Use a third-party program to build an interface for switching/ operating the DL-MUX4 over network

AMX/Crestron compatibility
The DL-MUX4 is also compatible with text-based media control over TCP/IP e.g. AMX and Crestron. Users can easily switch using the AMX or Crestron media control.

Move function
Using a DevCon-Center all configurations of the installed DL-MUX can be centrally viewed or edited. If a DL-MUX fails, its settings in the database are still active and visible. After the installation of a new DL-MUX, the administrator can transfer the „old“ settings by move-command to the new device. In this case the complexity of the new set up can be reduced.

Installation

Connect the computer to the back side of the devices. Standard cables link keyboard, video, mouse, audio, and USB interfaces to the switch.

Cable length of PS/2 cable sets: 2 m, 5 m
Cable length of USB cable sets: 2 m, 5 m

For installing the user console simply connect keyboard, monitor, mouse, speakers, and USB devices to the intended interface.

Feel free to download the DL-MUX manual to find out more details about the start-up.
The DL-MUX manual is additionally included in scope of supply.

Firmware / Expansion

IP-Control-API

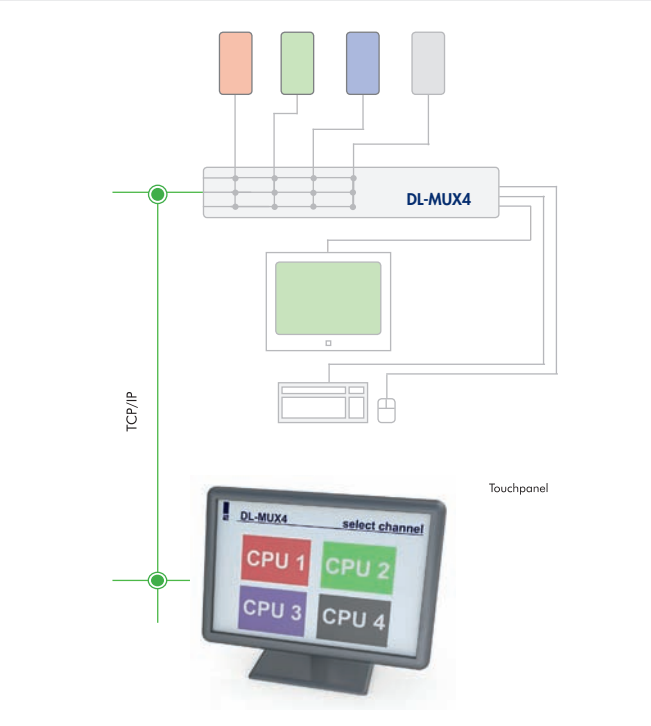
Function: DI-MUX4 remote control over IP
Operation via: customer-programmed user interface
Operating requirement:
activation within switch + programming of user interface
Effectiveness: system (several clusters)

The IP-Control-API function allows you to send switching commands to the DL-MUX4. The commands are sent via network and used to operate the system independently from the workplace.

With the IP-Control-API, operators can switch to another channel from anywhere, e.g. by using a touch panel. Text-based media control as AMX or Crestron can be easily integrated.

To program the user interface you are provided with the necessary Windows DLL or Linux SO interface.

IP-Switching also allows you to:
- Receive information about current switching conditions
- Cancel all switching conditions (disconnect)
- Receive information about the computer status



DL-MUX4

left: DL-MUX4 - Front view
right: DL-MUX4 - Rear view

	DL-MUX4
Video	
User console connection per device	1
Signal type/video	analog/digital video
Analog resolution	up to 1920 × 1440 @ 75 Hz incl. 2k x 2k @ 60 Hz
Digital resolution	btw. 640 × 480 @ 100 Hz and 2560 × 1600 @ 60 Hz incl. 2k × 2k @ 60Hz
Analog video bandwidth	400 MHz
Digital video bandwidth	DVI single-link 165 mbps DVI dual-link 330 mbps
Standards	E-DDC support
Digital colour mode	24 bit
No. of switchable video sources per computer	1
Computer connection	KVM cable set
Computer channels	4
Interfaces for user console	1 × DVI-I socket
Interfaces to computer	1 × DVI-I socket
Network	2 × RJ45 socket
Keyboard/Mouse	
Interfaces for user console	2 × Mini-DIN 6 socket
	2 × USB-A socket
Interfaces to computers	4 x (1 x Mini-DIN 6 socket) (via Adapter)
Audio	
Connection	analog
Bandwidth	22 kHz
Interfaces for user console	1 × 3.5 mm jack plug (speaker)
Interfaces to computer	2 × 3.5 mm jack plug (line in)

Transparent USB 2.0	
USB power supply	high power up to 500 mA
USB transmission rate	up to 480 Mbps
Transmission range	5 m
Interfaces for user console	2 × USB-A socket for USB 2.0
Interfaces to computers	4 x (1 x USB-B socket for K/M) and 4 x (1 x USB-B socket for USB2.0)
Main power supply	
Type	internal power pack
Connection	1 × IEC plug
Voltage	AC100-240V/60-50Hz
	0.4-0.2A
Redundant power supply	
Type	internal power pack
Connection	IEC plug
Voltage	AC100-240V/60-50Hz
	0.4-0.2A
Casing	
Material	anodised aluminium
Desktop (W × H × D)	435 × 44 × 210 mm
Rackmount (W × H × D)	19" × 1 U × 210 mm
Weight	approx. 2.3 kg
Update	
Process	over network
Connection	over network port
Operating conditions	
Temperature	+5 to +45 °C
Air humidity	< 80% non-condensing
Conformity	CE, RoHs

left: DL-MUX4-MC2 - front view
right: DL-MUX4-MC2 - rear view

	DL-MUX4-MC2
Video	
User console connection per device	1
Signal type/video	analog/digital video
Analog resolution	up to 1920 × 1440 @ 75 Hz incl. 2k x 2k @ 60 Hz
Digital resolution	btw. 640 × 480 @ 100 Hz and 2560 × 1600 @ 60 Hz incl. 2k × 2k @ 60Hz
Analog video bandwidth	400 MHz
Digital video bandwidth	DVI single-link 165 mbps DVI dual-link 330 mbps
Standards	E-DDC support
Digital colour mode	24 bit
Video sources per computer	2
Computer connection	KVM cable set
Computer channels	4
Interfaces for user console	2 × DVI-I socket
Interfaces to computer	2 × DVI-I socket
Network	2 × RJ45 socket
Keyboard/Mouse	
Interfaces for user console	2 × Mini-DIN 6 socket
	2 × USB-A socket
Interfaces to computers	4 x (1 × Mini-DIN 6 socket)
Audio	
Connection	analog
Bandwidth	22 kHz
Interfaces for user console	1 × 3.5 mm jack plug (speaker)
Interfaces to computer	1 × 3.5 mm jack plug (line in)
Transparent USB 2.0	
USB power supply	high power up to 500 mA
USB transmission rate	up to 480 Mbps
Transmission range	5 m
Interfaces for user console	2 × USB-A socket
Interfaces to computers	4 x (1 x USB-B socket for K/M) and 4 x (1 x USB-B socket for USB2.0)

Main power supply	
Type	internal power pack
Connection	1 × IEC plug
Voltage	AC100-240V/60-50Hz
	0.5-0.2A
Redundant power supply	
Type	internal power pack
Connection	IEC plug
Voltage	AC100-240V/60-50Hz
	0.5-0.2A
Casing	
Material	anodised aluminium
Desktop (W × H × D)	435 × 66 × 210 mm
Rackmount (W × H × D)	19" × 1 U × 210 mm
Weight	approx. 2.7 kg
Update	
Process	over network
Connection	over network port
Operating environment	
Temperature	+5 to +45 °C
Air humidity	< 80% non-condensing
Conformity	CE, RoHs

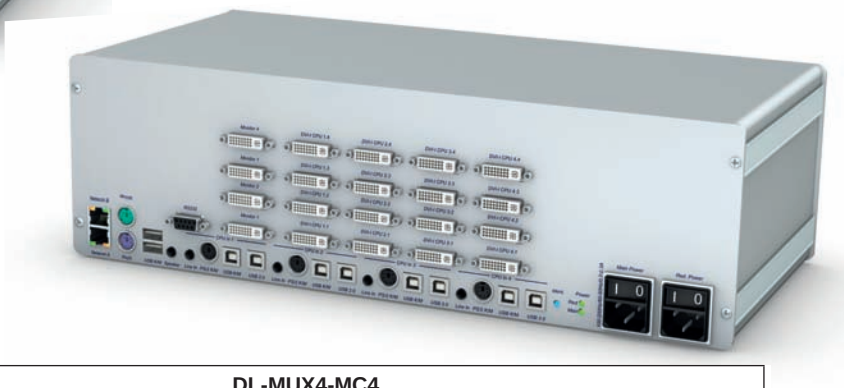
DL-MUX4-MC3

left: DL-MUX4-MC3 - front view
right: DL-MUX4-MC3 - rear view

	DL-MUX4-MC3
Video	
User console connection per device	1
Signal type/video	analog/digital video
Analog resolution	up to 1920 × 1440 @ 75 Hz incl. 2k x 2k @ 60 Hz
Digital resolution	btw. 640 × 480 @ 100 Hz and 2560 × 1600 @ 60 Hz incl. 2k × 2k @ 60Hz
Analog video bandwidth	400 MHz
Digital video bandwidth	DVI single-link 165 mbps DVI dual-link 330 mbps
Standards	E-DDC support
Digital colour mode	24 bit
No. of switchable video sources per computer	3
Computer connection	KVM cable set
Computer channels	4
Interfaces for user console	3 × DVI-I socket
Interfaces to computer	3 × DVI-I socket
Network	2 × RJ45 socket
Keyboard/Mouse	
Interfaces for user console	2 × Mini-DIN 6 socket
	2 × USB-A socket
Interfaces to computers	4 x (1 × Mini-DIN 6 socket)
	4 x (1 × USB-B socket)
Audio	
Connection	analog
Bandwidth	22 kHz
Interfaces for user console	1 × 3.5 mm jack plug (speaker)
Interfaces to computer	1 × 3.5 mm jack plug (line in)

Transparent USB 2.0	
USB power supply	high power up to 500 mA
USB transmission rate	up to 480 Mbps
Transmission range	5 m
Interfaces for user console	2 × USB-A socket
Interfaces to computers	4 x (1 x USB-B socket for K/M) and 4 x (1 x USB-B socket for USB2.0)
Main power supply	
Type	internal power pack
Connection	1 × IEC plug
Voltage	AC100-240V/60-50Hz
	0.6-0.3A
Redundant power supply	
Type	internal power pack
Connection	IEC plug
Voltage	AC100-240V/60-50Hz
	0.6-0.3A
Casing	
Material	anodised aluminium
Desktop (W × H × D)	435 × 88 × 210 mm
Rackmount (W × H × D)	19" × 1 U × 210 mm
Weight	approx. 3.1 kg
Update	
Process	over network
Connection	over network port
Operating environment	
Temperature	+5 to +45 °C
Air humidity	< 80% non-condensing
Conformity	CE, RoHs

DL-MUX4-MC4



left: DL-MUX4-MC4 front view
right: DL-MUX4-MC4 rear view

	DL-MUX4-MC4
Video	
User console connection per device	1
Signal type/video	analog/digital video
Analog resolution	up to 1920 × 1440 @ 75 Hz incl 2k x 2k @ 60 Hz
Digital resolution	btw. 640 × 480 @ 100 Hz and 2560 × 1600 @ 60 Hz incl. 2k × 2k @ 60Hz
Analog video bandwidth	400 MHz
Digital video bandwidth	DVI single-link 165 mbps DVI dual-link 330 mbps
Standards	E-DDC support
Digital colour mode	24 bit
No. of switchable video sources per computer	4
Computer connection	KVM cable set
Computer channels	4
Interfaces for user console	4 × DVI-I socket
Interfaces to computer	4 × DVI-I socket
Network	2 × RJ45 socket
Keyboard/Mouse	
Interfaces for user console	2 × Mini-DIN 6 socket
	2 × USB-A socket
Interfaces to computers	4 x (1 × Mini-DIN 6 socket)
	4 x (1 × USB-B socket)
Audio	
Connection	analog
Bandwidth	22 kHz
Interfaces for user console	1 × 3.5 mm jack plug (speaker)
Interfaces to computer	1 × 3.5 mm jack plug (line in)
Transparent USB 2.0	
USB power supply	high power up to 500 mA
USB transmission rate	up to 480 Mbps
Transmission range	5 m
Interfaces for user console	2 × USB-A socket
Interfaces to computers	4 x (1 x USB-B socket for K/M) and 4 x (1 x USB-B socket for USB2.0)

Main power supply	
Type	internal power pack
Connection	1 × IEC plug
Voltage	AC100-240V/60-50Hz
	0.7-0.3A
Redundant power supply	
Type	internal power pack
Connection	IEC plug
Voltage	AC100-240V/60-50Hz
	0.7-0.3A
Casing	
Material	anodised aluminium
Desktop (W × H × D)	435 × 132 × 210 mm
Rackmount (W × H × D)	19" × 1 U × 210 mm
Weight	approx. 3.5 kg
Update	
Process	over network
Connection	over network port
Operating environment	
Temperature	+5 to +45 °C
Air humidity	< 80% non-condensing
Conformity	CE, RoHs

List of Item Numbers

Item No.	Description	CPU channels	K/M		USB2.0	DT	RM
			PS/2	USB			
A2100097	DL-MUX4	4	PS/2	USB	USB2.0	DT	RM
A2100096	DL-MUX4-MC2	4	PS/2	USB	USB2.0	DT	RM
A2100116	DL-MUX4-MC3	4	PS/2	USB	USB2.0	DT	RM
A2100117	DL-MUX4-MC4	4	PS/2	USB	USB2.0	DT	RM

ABBREVIATIONS

CPU = Computer module
PC = Computer module

CON = User module
REM = User module

MC2 = Multichannel 2
MC3 = Multichannel 3
MC4 = Multichannel 4

M = Multimode
S = Singlemode
RM = For assembly in a 19“ rack
DT = Available as desktop variant
A = Audio
AR = Audio + RS232
R = RS232
U = transparent USB 1.1
U2 = transparent USB 2.0
D = Delay

EQUIPMENT FEATURES

= keyboard/mouse

= dual-link DVI video

= single-link DVI video

= single-link DVI + VGA

= VGA video

= Audio

= RS232

= USB 1.1

= USB 2.0

= Delay

= Screen Freeze

= Power Switching

= Fire Wire

= VT100

= KVM IP access

= Network connection

= Web interface

= DevCon support

= Monitoring

= CAT cable

= Fiber optics

= Single user

= Multi user

= Separat local/remote user